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GENERAL STUDIES (TEST CODE : 1500)

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Medium Eng./Hindi	ENGLISH	Registration Number	657129
Center	LUCKNOW	Date	16/11/2021

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
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4	10	
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18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI**
   इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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1. The extraction of groundwater in India has reached a level that is threatening the water security in the country. Analyse the guidelines issued by the Central Ground Water Authority in this regard. **(150 words) 10**

भारत में भौमजल का निष्कर्षण एक ऐसे स्तर पर पहुंच गया है, जो देश में जल सुरक्षा के समक्ष खतरा उत्पन्न कर रहा है। इस संबंध में केंद्रीय भूमि जल प्राधिकरण द्वारा जारी किए गए दिशा-निर्देशों का विश्लेषण कीजिए।

Groundwater is the water stored in underground aquifers in the earth. According to recent assessment by Central Ground water authority, about 37% of assessment units are at a critical level. This highlights threatening levels of groundwater extraction.

Reasons:

1.) Agriculture: It consumes about 90% of entire groundwater extracted. Most ground-water is used for cultivating water guzzling crops like rice, wheat, sugarcane.

2.) industries: unregulated extraction by industries.

3.) high groundwater demand in urban areas with high population density.

In this context, following new guidelines have been issued by Central Ground water authority:

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1.) all industries will require a NOC certificate to extract water.
2.) companies will have to pay water abstraction and usage charges.
3.) in critical units, only MSMEs will be allowed to extract water.

Issues with guidelines:

1.) The largest consumer i.e. agriculture has been exempted from guidelines.
2.) Household consumption and defense establishment have been exempted.
3.) payment of water usage charges may promote un-restricted usage and consumption.

Way forward:

1.) There is a need to reduce water consumption in agriculture by:-
1.1) rationalizing electricity subsidy
1.2) crop diversification to pulses, oilseeds, millets
1.3) promoting usage of micro-irrigation.

A comprehensive participatory & decentralized approach can help in reviving the water levels.

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2. Highlighting the distribution of coal in India, discuss the issues associated with coal mining. **(150 words) 10**

भारत में कोयले के वितरण को रेखांकित करते हुए, कोयला खनन से जुड़े मुद्दों की विवेचना कीजिए।

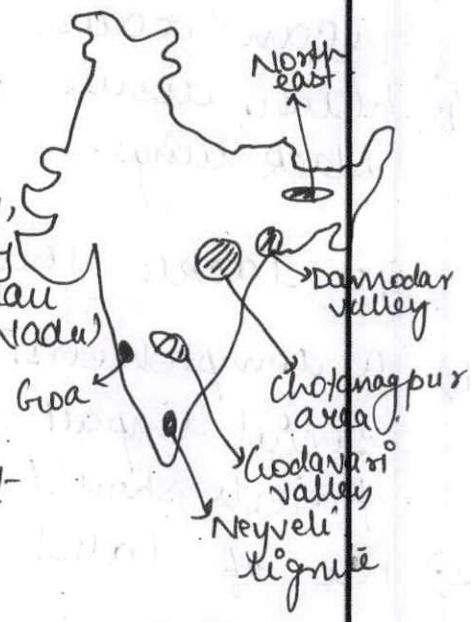
Coal is the major source of energy in India. Around 68% of electricity of India is produced via coal based thermal power plants.

Distribution of coal in India

In India coal of two different ages occurs:

1.) Gondwana Rocks : Damodar valley, Godavari valley, Chotanagpur plateau, Neyveli (Tamil Nadu), Goa.

2.) Tertiary rocks → in North East India.



Issues associated with coal mining:

1.) ecological issues.
1.1) large scale cutting down of forest.
1.2) adverse effect on local wildlife.
1.3) huge consumption of freshwater is needed.
1.4) it can occassionally contaminate ground water.

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1.5) collapse of abandoned coal mines can cause earthquake.

1.6) large scale air pollution due to dust and particulate matter

Social issues:

1) displacement of tribals from their homeland.
2) loss of traditional means of livelihood leading to poverty among tribals.
3) mining accidents due to gas leaks can cause large scale deaths.
4) health issues faced by miners. eg: black lungs.

To tackle these issues:

1) a comprehensive environmental & social impact assessment of mining projects should be done.
2) use of latest ~~te~~ coal mining technologies.
3) use techniques like coal gasification to reduce challenges associated with coal.

Given the developmental needs of India, coal mining should be developed along modern & scientific lines to ensure sustainability.

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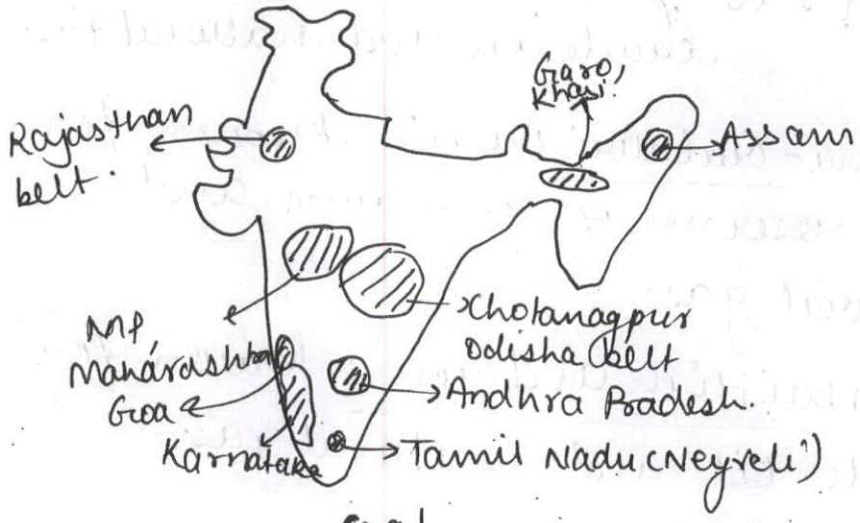
3. Give an account of the different mineral belts in India. (150 words) 10
भारत की विभिन्न खनिज पेटियों का विवरण दीजिए।

Minerals are naturally occuring elements or compounds found in nature. In India, there is abundance and diversity of mineral availability.

Different mineral belts of India:



1.) Chotanagpur - odisha belt → coal, iron ore, bauxite, manganese, mica are important ~~etc~~ minerals.

2.) MP, Maharashtra: major minerals include mica, limestone, coal.

3.) Goa: major minerals are iron ore and coal.

4.) Karnataka: iron ore is the major mineral.

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5.) Andhra Pradesh: ~~Geo~~ Cuddapah rocks are repository of limestone, diamonds (Golconda)

6.) Rajasthan: It is famous for copper in Khetri mines.

7.) Garo, Khasi, Jaintia → famous for coal.

8.) Assam → is ~~of~~ important source of crude oil and natural gas.

9.) Krishna-Godavari Basin: known for huge reserve of petroleum and natural gas.

10.) Mumbai High and Goa: known for crude oil and natural gas.

Mineral belts need strong governmental support, infrastructure creation, technology upgradation and value addition.

It can help in industrial development of India

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4. Throw light on the contribution of agriculture to GHG emissions. Suggest measures that can be undertaken to address the challenges in reducing agriculture's carbon footprint in India. **(150 words) 10**

GHG उत्सर्जन में कृषि के योगदान पर प्रकाश डालिए। भारत में कृषि के कार्बन फुटप्रिंट को कम करने में विद्यमान चुनौतियों से निपटने के लिए किए जा सकने वाले उपायों का सुझाव दीजिए।

Agriculture is the mainstay of Indian economy. With the climate change, there is increased scrutiny of agriculture as a source of Greenhouse gas emissions.

GHG emissions from agriculture:

1.) Methane: rice cultivation by flooding the fields is a major source of methane emissions.

2.) use of fertilisers (primarily nitrogeneous one like urea) lead to emission of harmful nitrous oxide.

3.) stubble burning leads to release of carbon dioxide, Black carbon, particulate matter.

4.) huge diesel generates used for ground-water extraction also add to GHG emissions.

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Measures that can be taken:

1) to reduce rice based methane emission:
   1.1) promote direct seeding of rice which does not require field flooding
   1.2) promote crop diversification.

2.) encourage organic farmer and Zero budget natural farming to reduce ~~emi~~ fertiliser usage.

3.) promote bio-decomposition of stubble like Pusa biodecomposer technology used in Delhi.

4.) Instead of burning stubble, use "Swedish Torrefaction" technique to convert it to bio-char.

5.) solarize the diesel pumps via PM-Kusum scheme. This will reduce diesel generator related emission.

Holistic ~~w~~ steps can ensure the de-carbonization of entire agricultural value chain.

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5. Assess India's vulnerability and preparedness to deal with the sea level rise. **(150 words) 10**

समुद्र तल में वृद्धि के प्रति भारत की सुभेद्यता और इससे निपटने में इसकी तैयारियों का मूल्यांकन कीजिए।

According to latest IPCC assess-ment report earth has warmed upto 1.2°C above pre-industrial level. This has accelerating the melting of ice and leading to rise of sealevel

Vulnerability of India:

1.) India has 7500 km long coastline which is susceptible to submergence.

2.) Major cities like Mumbai, Vishakhapatnam, Chennai are coastal cities. Any rise in sea level can:
2.1) damage the infrastructure
2.2) affect economic activities
2.3) lead to migration of people.

3.) Some islands in Lakshadweep and Andaman and Nicobar can be sumerged.

4.) coastal agricultural fields in areas like Kerala can be sumerged.

Hence it is necessary to ensure preparedness

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India's preparendness

Strengths:

1.) presence of advanced climate and sea monitoring & modelling technology to predict the impact.

2.) presence of international coalitions for sea level rise. eg: CDRI

weakness:

1.) lack of participatory planning

2.) poor capacity to implement advanced construction techniques like sea retention wall.

3.) weak institutional capacity

4.) inadequate workforce to plan and implement adaptation schemes.

Going forward, India needs to work on its preparedness to deal with inevitable. It has been rightly said - "Time to talk is over, Time to act is now".

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6. What are the challenges faced by the jute industry in India? Highlight the steps taken by the government to address these challenges.

(150 words) 10

भारत में जूट उद्योग को किन चुनौतियों का सामना करना पड़ रहा है? इन चुनौतियों से निपटने के लिए सरकार द्वारा उठाए गए कदमों को रेखांकित कीजिए।

Jute is a bio-degrable natural fibre that is used for variety of purpose like making ropes, gunny bags for packaging etc.

Challenges faced by jute industry:

1.) small size of jute making firms
2.) use of obsolete machinery and technology.
3.) inadequate connect to high value markets like USA, European union.
4.) challenge and competition from Bangladesh.
5.) Competition from synthetic fibres.
6.) inadequate branding and marketing.

Steps taken by government:

1.) A National Jute policy has been

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put in place a comprehensive roadmap.

2.) Board to promote jute has been set up.

3.) MSP is announced for jute to incen-tivize jute cultivation.

4.) mandatory jute packaging for certain percentage of sugar in sugar mills.

5.) mandatory jute packaging for FCI grain godowns.

6.) Branding and promoting jute in international markets

These steps will ensure that jute production stays at healthy level.

With rising consciousness of bio-degradable fibres, jute can well become the "golden fibre".

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7. Give an account of factors that determine the location of Iron and Steel Industry in India. **(150 words) 10**
भारत में लौह-इस्पात उद्योग की अवस्थिति का निर्धारण करने वाले कारकों का विवरण दीजिए।

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

8. Discuss the causes and consequences of Harmful Algal Blooms (HAB). **(150 words) 10**

हानिकारक शैवाल प्रस्फुटन (HAB) के कारणों और परिणामों की विवेचना कीजिए।

Harmful algal bloom refers to proliferation of algae in water bodies and oceans due to anthropogenic causes. It is harmful because it causes harmful airborne disease.

Causes:

1) excessive addition of nutrients in water body due to:
   1.1) inflow of sewage waters
   1.2) agricultural runoff containing pesticides and fertilisers.
   1.3) discharge of industrial effluents.

2) release of warm water in water bodies which causes thermal pollution.

Consequences:

1) large scale coverage of waterbody with algae.

2) slowdown or stopage of oxygen generation process in water body.

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3) ~~mass~~ death of fishes and other aquatic life.

4.) depletion of oxygen in water body.

5.) emission of foul odour which contains harmful gases which affects human health.

6.) contamination of drinking water supply.

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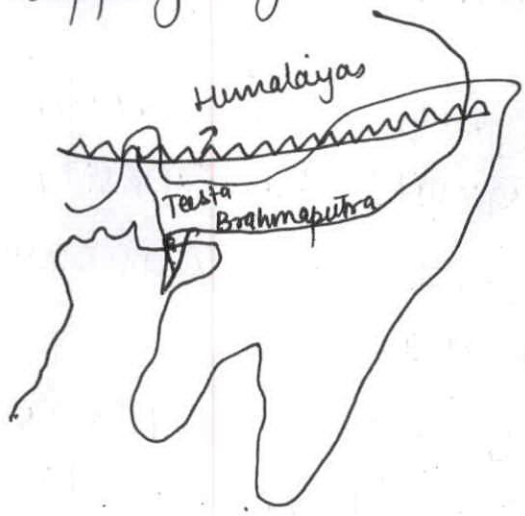
9. Discuss the challenges that lie in harnessing the potential of hydroelectricity in North-East India. **(150 words) 10**

पूर्वोत्तर भारत में जलविद्युत की संभावना का दोहन करने में आने वाली चुनौतियों की विवेचना कीजिए।

North east India has a rugged topography consisting of mountains and fast flowing rivers. This makes it ideal for tapping hydro electric power.



Challenges in tapping

1.) ecological

1.1) dams will lead to submergence of large scale pristine forest and biodiversity will be lost.

2.) geographical: region is seismically active and dams can be prone to disasters

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3.) social: dam can cause large scale displacement of tribal people and loss of their livlihood like shifting cultivation.

4) administrative: delays in granting approval

5.) connectivity: due to mountaneous terrain, road connectivity is poor & it is difficult to transport construction material.

6.) ecological: dam can affect downstream aquatic biodiversity

7.) security: threat of insurgency in the region.

Thus going forward a comprehensive approach is needed for dam construction. It involves:

1.) proper environmental impact assessment

2.) stakeholder consultation via ~~pro~~ participatory approach

3.) proper grid infrastructure to evacuate electricity.

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10. Identify the factors affecting location of cement industry in India. Also, suggest measures to control the carbon footprint of the cement industry. **(150 words) 10**

भारत में सीमेंट उद्योग की अवस्थिति को प्रभावित करने वाले कारकों की पहचान कीजिए। साथ ही, सीमेंट उद्योग के कार्बन फुटप्रिंट को नियंत्रित करने के उपायों का भी सुझाव दीजिए।

Cement industry is one of the key backbone and core industry in India. various factor affect the location of cement industry.

1.) availability of limestone. eg: many cement factories are located in Madhya Pradesh & Andhra Pradesh due to limestone.

2.) availability of gypsum. eg: some cement factories in Rajasthan are dependent on local gypsum supply.

3.) Many cement factories located near coastal areas. because raw material can easily be imported.

4.) Many cement factories are located close to market centres eg: cement factories near important metropolitan cities.

To control the carbon footprint of

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Cement industry :

1.) encourage the use of cleaner fuels like natural gas.

2.) increase the proportion of flyash mixed in cement.

3.) improve limestone mining technologies.

4.) use ~~so~~ clean fuels in transporting cement.

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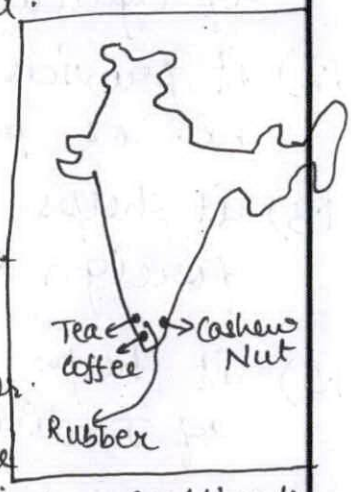
11. Highlight the reasons behind high concentration of plantations in South India. Also, give an account of the significance and challenges that the plantation sector of South India is confronted with. **(250 words) 15**

दक्षिण भारत में बाग़ानों के उच्च संकेन्द्रण के लिए उत्तरदायी कारणों पर प्रकाश डालिए। साथ ही, दक्षिण भारत के बाग़ान क्षेत्रक के महत्व और उनके समक्ष व्याप्त चुनौतियों का भी विवरण दीजिए।

Plantation is an highly commercial and specialized form of cultivation of cash crops in India. Most of plantations of crops like tea, coffee, rubber, banana are located in South India.



Reasons:

1.) Climate:

1.1) Tropical climate with temperature more than 22°C favours cultivation of rubber.

1.2) Slopes of western ghats are relatively cooler and help in tea cultivation.

1.3) Rainfall of more than 100-120 cm helps in cultivation of crops.

1.4) Monsoon lasts for more than 4 months in south India.

2.) Soil: Red soil and laterite soil can be made fertile by adding fertilisers.

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3.) Labour: abundant availability of workforce to work on plantations

4.) Connectivity: Proximity to port helps in exporting cash crops grown in plantation.

Significance of plantation

1.) economy:

1.1) it is most remunerative sector of agricultural economy.

1.2) it provides employment to large no. of people

1.3) it helps in earning precious foreign exchange.

1.4) it helps in building brand-value of Indian products

1.5) It supports ancillary small and medium industries.

2.) social:

2.1) large scale employment of women help in economic empowerment of rural and tribal women.

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Challenges :

1.) Plantation uses obsolete machinery and outdated processes.
2.) Inadequate quality control and standardization.
3.) Low connect with high value markets like USA, European Union.
4.) Poor connectivity via roads, ports.
5.) Frequent disturbance and damage by wildlife like elephants.
6.) Pest attacks.
7.) Climate change and consequent floods and landslides

Way forward:

1.) holistic landscape planning to minimize impact of landslide, animal damage
2.) strengthen infrastructure, value addition, market connect.

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12. Assess the efforts India has taken towards achieving the goals of the Strategic Plan for Biodiversity (2011-2020). **(250 words) 15**

जैव विविधता के लिए रणनीतिक योजना (2011-2020) के लक्ष्यों को प्राप्त करने की दिशा में भारत द्वारा किए गए प्रयासों का मूल्यांकन कीजिए।

Biodiversity refers to diversity found at genetic, species and ecosystem level. To arrest rapid decline in biodiversity, Aichi Biodiversity goal and strategic plan for Biodiversity has been approved by Convention for Biodiversity (CBD).

The strategic plan of biodiversity ends in 2020 and hence 2020 was declared "super year of Biodiversity)

Steps taken by India:

1.) Forest Conservation

1.1) Green India Mission to enhance forest cover by 5 million hectare and to increase quality of forest cover in another 5 million hectare.

2.) under Bonn Pledge, India has pledged to restore forest 26 million hectare by 2023.

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2.) Economic.

2.1) Natural capital accounting via NCAVES project to include cost of natural capital in policy planning.

Wildlife specific

1.) Lichen → a new park for lichen set up at Munsiyari, uttarakhand.

2.) Grasshopper survey in Kerala.

3.) Recovery programme for Critically endangered species which includes sea cow (dugong dugong), Great Indian Bustard, Lion Tailed Macaque, Gangetic dolphin, Nilgiri Tahr.

4.) Project Tiger → Census for Tiger and regular evaluation of tiger reserve via MEE framework.

5.) use of digital/GPS technology eg:- M Stripes app for geo-tagging tiger presence.

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6.) Project Elephant-s to improve population of wild elephants.

7.) Vulture Conservation and Breeding programme. eg. Centre at Pinjore, Haryana.

8.) Special drive to conserve population of Olive Ridley turtle (specially at Rushikulya beach, Odisha).

9.) for ex-situ biodiversity conservation,

9.1) botanical gardens and zoological parks have been set up for plants and animals respectively.

9.2) seed banks set up to preserve seeds

9.3) germplasm of endangered species conserved.

10.) Biodiversity exchange has been approved.

These steps are important steps by India towards Strategic Plan. India need to play active role in Kunming (China) COP for Post-2020 biodiversity plans.

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13. What do you mean by industrial inertia? Bring out the factors that contribute to industrial inertia and also give a few examples from the Indian context. **(250 words) 15**

औद्योगिक जड़त्व से आप क्या समझते हैं? औद्योगिक जड़त्व में योगदान देने वाले कारकों को स्पष्ट कीजिए और साथ ही भारतीय संदर्भ से कुछ उदाहरण भी दीजिए।

Industrial inertia is a phenomena where a particular industry continues to operate in a particular region even after region's locational advantages have disappeared.

This primarily happens due to historical connect with place.

Factors responsible:

1.) A particular industry has :-

1.1) well established running enterprise

1.2) well trained pool of employees already at workplace.

1.3) well established supply chain of raw material and market.

1.4) proper regulatory approvals to remain in place.

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Hence industry continues to operate in a particular region as result of industrial inertia.

It avoids to ~~go into~~ relocate itself because:—

1.) Relocation will require immense capital and investment.

2.) Regulatory approvals may not be in place

3.) It will be difficult to find and train new workers.

4.) A market may not be easily available.

Examples of industrial inertia in India:

1.) A large no. of firms have continued in West Bengal as it was key economic centre during British rule.

2.) Cotton making ~~or~~ industry in Ahmadabad, Mumbai as they were

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started there due to colonial rule.

3.) Leather making industry in Kanpur and Agra.

To overcome industrial inertia following measures are need ~~to~~ by government:

1.) simplifying rules to enhance ease of business across entire country.

2.) large drive to strengthen connectivity via roads and highways.

3.) Skill mapping and skill augmentation of workers.

4.) enhancing credit access.

This will ensure that companies easily overcome industrial inertia and relocate to new places.

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14. What are rare earth elements? Highlighting their industrial applications, give an account of their distribution across the world. **(250 words) 15**
दुर्लभ मृदा तत्व क्या हैं? उनके औद्योगिक अनुप्रयोगों को रेखांकित करते हुए, विश्व भर में उनके वितरण का विवरण दीजिए।

Rare earth elements are elements called as lanthanides and actinides in periodic table. Some examples are: Yttrium, Lanthanium, Actium, Niobium etc.

Applications:

1) electronics: These elements find large scale usage in semiconductor and electronics.
2) To build powerful electromagnets
3) To create better catalysts in chemical industry.
4) they are also used in catalytic convertors of automobile to reduce harmful gases from vehicular emission.
5) They are used to make high strength

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and heat resistant spacecraft parts.

6.) They are also used in petroleum industry.

Distribution across world:

Rare elements are called rare because of their diffused concentration. However they are found all across world

1.) China → is the world's largest producer of rare earth mentals.

2.) South east asia → Indonesia, Malaysia (Kinta valley).

3.) Australia

4.) Chile in South America

5.) India:

5.1) Chavara in Kerala.

5.2) Manvalkurichi in Tamil Nadu

5.3) Chatrapur in Odisha.

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Indian PSUs are involved in mining of rare earth metals which are also used in nuclear industry.

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15. Given the nature of air pollution crisis in India, certain context-specific solutions are required to tackle it comprehensively. Discuss. **(250 words) 15**

भारत में वायु प्रदूषण संकट की प्रकृति को देखते हुए, इससे व्यापक रूप से निपटने के लिए कुछ संदर्भ-विशिष्ट समाधानों की आवश्यकता है। चर्चा कीजिए।

According to IqAir report 2021, 9 out of 10 most polluted cities in terms of air pollution are in India.

Nature of air pollution crisis:

1.) ~~high co~~ agriculture sector: it contributes to methane emissions from paddy farming, nitrogen oxides from fertilisers & particulate & CO_2 via stubble burning.

2.) Vehicles: vehicular emission results in CO_2, SO_x and NO_x emissions.

3.) industries: are major source of carbon dioxides, oxides of sulphur & nitrogen.

4) construction sector: emits large scale dust particles

5.) Thermal power plants: emit huge

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quantities of Carbon, sulphur oxides and large amount of soot, flyash.

6.) Cooking: women in rural areas use traditional fuels like cowdung, wood.

Context specific solutions:

1.) Agriculture:
1.) adopt direct seeding method of rice cultivation to reduce methane emission.
2.) adopt Pusa-decomposer technology of Delhi to tackle stubble burning. Bio-decomposers reduce need of stubble burning.

2.) vehicles:
2.1) promote electric vehicles.
2.2) improve fuels → usage of BS VI fuel, CNG, green hydrogen.

3.) industries and thermal power plant:
3.1) for SO_x: use flue-gas desulphurization
3.2) for NO_x: use Selective Catalytic Reduction (SCR) technique.

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4.) construction sector:

4.1) frame guidelines to regulate technologies used.

4.2) promote covered construction sector.

5.) Electricity generation

5.1) replace thermal power plants with solar, wind and green hydrogen based fuels.

5.2) for current plants → adopt coal gasification technology.

6.) Cooking:

6.1) promote usage of LPG and ~~electric~~ electricity induction stoves.

7.) institutional

7.1) capacity building of newly formed Commission for Air Quality in NCR, CPCB.

These measure can significantly cut down air pollution levels in India.

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16. India needs to move from being an assembler to a manufacturer of microchips. In this context, identify the associated challenges and opportunities. **(250 words) 15**

भारत को माइक्रोचिप्स के असेंबलर से विनिर्माता बनने की दिशा में आगे बढ़ने की आवश्यकता है। इस संदर्भ में, संबंधित चुनौतियों और अवसरों की पहचान कीजिए।

Micro-chips refer to small sized semi-conductor chips which are increasingly being used in day-to-day gadgets, appliances, devices, control systems.

Rise of 5G, Artificial Intelligence and Internet of Things has given significant fillip to micro-chip industry.

In this context, associated ~~the~~ challenges for India are:

1.) Historical: lack of any previous chip manufacturing base

2.) Geographical: Inadequate mining and processing of silicon and rare earth metals used in industry

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3.) Research: lack of adequate research and development in chip manuf-acturing.

4.) Administrative: Complex regulatory regime and outdated laws like IT Act, 2000.

5.) Imports: heavy reliance on import for chips and associated hardware.

6.) Strategic: Semi-conductor chips are strategic sectors and countries like USA, Taiwan are not willing to share technology.

Opportunities in sector:

1.) Presence of large consumer base in India and huge market for the sector.

2.) large base of IT companies in India.

3.) Large push by government in form of Digital Communication Policy, 2018

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(इस भाग में कुछ ना लिखें)

and National Electronic manufacturing policy, 2019.

(ii)

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17. Explain the concept of Ecosystem Restoration. What are the challenges and opportunities associated with this concept? **(250 words) 15**
पारिस्थितिक तंत्र पुनर्स्थापन की अवधारणा की व्याख्या कीजिए। इस अवधारणा से जुड़ी चुनौतियाँ और अवसर क्या हैं?

Ecosystem restoration refers to the process of restoring, revitalising the ecological process, ~~pr~~ services and productivity of an ecosystem.

UNCCD & FAO has recently declared 2021-30 as the UN Decade on Ecosystem Restoration.

Challenges:

1.) Climate change: is leading to increased instances of extreme events like flood, droughts which makes ecosystem restoration difficult.

2.) Pollution: discharge of effluents in rivers, oil spills in ocean, garbage on land make process of

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restoration difficult.

3.) deforestation: It leads to loss of natural vegetation and recovering it is a difficult process.

4.) Soil erosion: It leads to land degradation and intensifies desertification.

5.) Acid rain: It destroys natural vegetation in large area.

6.) Encroachment: on rivers, forest areas poses social & development challenge to ecological restoration.

opportunities:

1.) Globally:

1.1) FAO, UNCCD are playing vital role in developing global consciousness on the issue.

1.2) Countries are partnering. eg: Pace setter fund for Forest Land-scape restoration between

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USA and India.

1.3) Commitments are being by nations under Bonn Pledge challenge to restore 300 million hectare forestland by 2030.

1.4) special projects for coral reef restoration in Coral Triangle.

2) Nationally:

1.) Namami Gange to restore "Aviral Nirmal Dhara" of ganga

2.) Ecosystem Restoration in Himalayas via "Secure Himalaya" programme.

3) Local level: Agro-forestry model of Hoshangabad, water body restoration in Kupwara (J & K).

Clearly A lot of opportunities exist for global and national community to sustainably restore landscape.

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18. Though there are various problems associated with single-use plastics, a number of challenges will need to be addressed before a blanket ban on their use can be imposed. Discuss. **(250 words) 15**

यद्यपि, एकल उपयोग वाली प्लास्टिक से विभिन्न समस्याएं जुड़ी हुई हैं, तथापि उनके उपयोग पर पूर्ण प्रतिबंध आरोपित करने से पूर्व अनेक चुनौतियों को दूर करने की आवश्यकता होगी। चर्चा कीजिए।

Single use plastic refers to plastic that can be used only once.

Problems associated:

1.) It is non-biodegradable

2.) Plastic, when burned releases CO_2, SO_2, NO_x and other organic compounds.

3.) Plastic clogs the urban drainage system.

4.) Plastic if ingested by animals causes painful diseases & death.

5.) Plastics in landfills generates harmful odour & gases

6.) Plastic breakdown into micro-beads and affects the aquatic and marine life.

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India has pledged to eliminate single use plastic by 2022. However there are several challenges in imposing blanket ban:

1.) it can lead to shut down of large no. of plastic manufacturing firms.

2.) it can cause job losses.

3.) it can affect associated MSMEs.

4.) it can disrupt upstream chemical industries & downstream vendors.

5.) substitute packaging material may not be easily available.

Therefore following steps are needed along with ban:

1.) promote research on alternatives and substitutes

2.) skilling up of workers in plastic firm so that they can seek alternative employment.

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3.) Technological upgradation and transformation of plastic manufacturing companies to other companies.

4.) gradual transformation and phase-wise plastic usage reduction targets to give industry time to transition.

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19. Highlight the natural and anthropogenic factors contributing to climate change. Also, discuss the changes in climate witnessed in the Indian subcontinent since the middle of the 20th century. **(250 words) 15**

जलवायु परिवर्तन में योगदान देने वाले प्राकृतिक और मानवजनित कारकों को रेखांकित कीजिए। साथ ही, 20वीं सदी के मध्य से भारतीय उपमहाद्वीप में जलवायु में देखे गए परिवर्तनों की भी विवेचना कीजिए।

Climate change refers to gradual change in average weather conditions due to anthropogenic activities or other other natural factors.

Natural factors:

1.) milankovitch oscillation: gradual wobbling of earth's axis of rotation which is supposed to have caused climate change.

2.) solar flares and solar eruptions.

anthropogenic factors:

1) burning of fossil fuels like coal, wood, petroleum which releases vapours

2.) methane emissions from agriculture.

3.) large scale emissions of methane from livestock rearing.

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4.) deforestation.

Changes witnessed in Indian subcontinent:

1.) rise in sea level.

2.) glaciers: significant retreat of glaciers particularly in Hindukush region.

3.) rivers: increasing runoff due to glacier melting.

4.) ~~sea level~~ rise in intensity and frequency of cyclonic rainfall, floods.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

20. Identify the causes behind the prevalence of various forms of human-wildlife conflicts in India. Also mention the steps taken by the government to prevent these, with emphasis on the "Landscape Approach to address Human-Elephant Conflicts". **(250 words) 15**

भारत में मानव-वन्यजीव संघर्षों के विभिन्न रूपों की व्यापकता के लिए उत्तरदायी कारणों की पहचान कीजिए। "मानव-हाथी संघर्षों को दूर करने के लिए भूदृश्य दृष्टिकोण" पर बल देते हुए, इन्हें रोकने के लिए सरकार द्वारा उठाए गए कदमों का भी उल्लेख कीजिए।

Recently various forms human-an-animal conflicts were reported. eg: monkey menace in urban areas, elephants destroying plantations, neelgai destroying crops, tiger preying on humans.

Causes behind human-wildlife conflicts.

1.) deforestation & habitat destruction.
2.) encroachment on forest margins.
3.) rising prey related distress for animals.
4.) fragmented forest corridors.
5.) shortage of water in urban areas.

To tackle with this menace, recently Landscape approach was proposed:

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1.) analyze and map entire landscape
2.) involving tribal concerns in landscape planning.
3.) design landscape to include food & water concerned.
4.) prepare elephant corridor

other steps taken by government:

1.) National wildlife action plan (2017-3) has been prepared.
2.) Indo-German collaboration to tackle human-elephant menace.
3.) Coordination between forest department and locals with help of 24x7 helpline no.

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GENERAL STUDIES (TEST CODE : 1514)

Name of Candidate	ASHUTOSH KUMAR		
Medium Eng./Hindi	ENGLISH	Registration Number	657129
Center	LUCKNOW	Date	

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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16	15	
17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI**
   इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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Plot No. 857, 1st Floor, Banda Bahadur Marg (Opp Punjab & Sindh Bank), Dr. Mukherjee Nagar Delhi- 110009

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

35 - 105

Q1.)

69th amendment Act provides for the administration of National Capital Territory of Delhi's administration. It provides a Constitutional scheme keeping in mind special representative needs of Delhi and its strategic position.

Changes introduced by GNCTD Act, 2021

1.) The term "government" in Delhi will mean Lt. Governor.

2.) Delhi Legislative Assembly or its committees cannot discuss the matters related to day-to-day administration of Delhi.

3.) Lt. Governor will not refer any such bill to president over which legislative assembly has no jurisdiction.

4.) Delhi government will send executive matters for opinion of Lt. Governor.

Issues with the present bill:-

1.) Bill concentrates legislative & executive power in hands of Lt. Governor.

2.) It is against spirit of 2018 supreme court judgement in Govt of NCT vs Union of India

3.) Delhi's elected government may have to wait endlessly for LG's opinion.

4.) Bill not not discussed in detail in parliament.

5.) Bill affects the spirit of cooperative federalism.

There is a need to reform the bill in line with spirit of supreme court's judgement to ensure uniformity, ~~pri~~ & uphold highest traditions of democracy.

Q2.)

IPC section 124A provides for sedition law. sedition refers to any act of exciting "disaffection" against lawfully elected government of India by words, signs, speeches.

Recently several debates have occurred around sedition law:-

1.) Law affects freedom of speech and expression of political opponents of those in power.
2.) Law has been misused to jail journalist who criticize policies of government.
3.) It is a colonial era law which was used target freedom fighters like Tilak, Gandhi.
4.) sedition law affects freedom and liberty of citizens protected under Article 21 of constitution.
5.) sedition law related convictions have been very low in judiciary.

Valid arguments for continuing with law:-

1.) Law is needed by government to tackle maoism, insurgency.

2.) Sedition law can help government to maintain law & order and save public life & property.

3.) Sedition law has been upheld as Constitutional by supreme court in Kedar-nath vs State of Bihar case.

Going forward ~~the~~ police need to follow Supreme Court guidelines in Kanhaya Kumar case to ensure that sedition law is applied only in cases of violent actions & disruption of public order.

Q3.)

Parliamentary standing committees are bodies set up by parliament to strengthen the oversight of parliament over the executive. These committees examine demand for grants of ministries, study their bills etc.

Issues leading to decline of parliamentary committee:

1.) Low attendance of MPs in parliamentary committee
2.) the tenure of member is small i.e. only for 1 year.
3.) committees do not have power to give binding advise to government.
4.) Since 16th Lok Sabha, only 23% bills are referred to committee.
5.) During COVID lockdown, a large no. of committees could not hold their scheduled meetings.

Steps needed to address these issues:

1.) Enhance the tenure of members to ensure work specialisation.

2.) Allow the committees to meet in hybrid format i.e. physical & digital mode.

3.) PM has called for "One Nation One Legislative Portal" to enhance technological support to committees.

4.) Dedicated research teams should assist each committee.

5.) Overall parliament should enhance no. of bills for parliamentary committees for effective consultation.

These steps can ensure that parliamentary committees play an transformative role in parliamentary system of country.

Q4.)

According to Article 74, there shall be Council of Minister headed by Prime Minister to aid and advise the President. PMO in recent times has emerged as a powerful institution because:-

1.) Prime Minister's leadership ensures better coordination with other ministries.

2.) PMO can ensure cross-departmental consultation on key issues & help in ironing out disputes.

3.) PMO itself can push key policy decisions. eg: demonetisation.

<u>Advantage of immense powers in PMO:</u>

1.) faster decision making on key issues

2.) harmonious coordination among departments.

3.) Less red tapism & bureaucratic delays.

4.) cross-sectoral policy inputs are avail-able to PMO.

Issues with immense power:-

1.) it can cause centralisation of power
2.) stakeholder consultation & consensus based approach may be compromised.
3.) high decision making burden on PMO itself can cause delays.
4.) Less coordination may be there as diverse view points may be not be avail-able to PMO.
5.) less autonomy for department & Cabinet Ministers.

There is a need to ensure harmoni-ous balance between PMO's powers & autonomy to each department to ensure "Team India spirit" is present in entire machinery.

Q5:)

"Data is fast emerging as new oil". - Mukesh Ambani.

Recently world bank report on "Public Intent Data" has revived the debate on significance of data in governance.

Role of data in governance:—

1.) data ensures faster decision making
2.) data can lead to evidence-informed decision making.
3.) data can lead to better understanding of policy challenges at regional & social level.
4.) data helps in enhancing transparency and accountability in governance.
5.) data helps in identifying & plugging leakages in funds, schemes etc.

Challenges regarding data:

1.) lack of modern data collection capability & systems.

2.) data is collected in siloed approach.

3.) inadequate data storage infrastructure

4.) data is rarely integrated with other databases.

5.) lack of real-time data availability.

Remedial measures :

1.) real time data collection via modern mechanisms.

2.) ensure integration of databases with help of Big data analytics.

3.) enhance data storage infrastructure in country eg: data centre park in Noida.

4.) usage of data in all ministries for policy making.

A data-driven governance can help in achieving PM Modi's mantra of P2G2 - "Pro-People Good Governance".

Q6.)

Civil society refers to a group of citizens engaged in articulating their interest to push for desired change in policies of government.

Conditions that led to emergence of new civil society in urban India:

1.) enhanced awareness of human rights violations, custodial violence etc. eg: PUCL.

2.) enhanced child labour and human trafficking in urban areas. eg: Bachpan Bacho Andolan by Kailash Satyarthi (Nobel laureate).

3.) government apathy towards corruption. eg: India Against corruption.

4.) greater environmental destruction in urban forest: eg: protest against Aarey

forest cutting in Mumbai:

Contribution of new civil society:

1.) helped in pushing for Child Labour Prohibition Act, 2016.

2.) helped in pushing for police reforms. eg: PUCL.

3.) ADR has helped in highlighting opaque electoral funding & led to electoral bonds scheme.

4.) India Against Corruption's drive helped in enactment of Lokpal & Lokayukta Act, 2013.

Civil society should effectively partner with government & public to promote the public cause in India & lead to greater public activism.

Q7.)

Recently PM Gati Shakti Mission was announced to fastrack the process of infrastructure creation in country. It is hailed as a major "business process re-engineering reform" in governance.

<u>address infrastructure bottlenecks:-</u>

1.) promote the completion of greenfield & brownfield infrastructure.

2.) help in attracting private investment in infrastructure building.

3.) give a thrust to multimodal connectivity across India.

4.) fastract National Infrastructure Pipeline of 102 crore rupees envisaged.

streamline governance process :

1.) an Empowered Group of Secretaries (EGoS) headed by Cabinet secretary has been setup to :

1.1) grant fast approvals to projects.

1.2) to reduce contract related disputes.

1.3) to laydown standards & norms for quality of infrastructure.

1.4) to ensure faster project clearence, ensure inter-department policy coherence.

Overall PM Gati Shakti provides an ambitious roadmap for building strong foundations of Atmanirbhar Bharat based on strong infrastructure.

Q8.)

According to recent estimates, e-shram portal has clocked more than 1crore registrations. More than 90% workforce of India works in informal sector.

Issues faced by workers:

1.) insecure jobs with poor wages.

2.) lack of social security benefits like insurance, pension benefits.

3.) hazardous & unsafe working condition without access to sufficient protective gear.

4.) low female workforce participation in informal sector.

5.) lack of data driven policy & low awareness of schemes.

e-shram portal: portal recently launched to help unorganised & informal workers to register.

How eshram portal will help in addressing issues?

1.) unique ID provided to all registered workers.

2.) workers will be allowed to access social security schemes like Pm shram yogi maandhan.

3.) enhance data availability with government at more granular level.

4.) help workers to ensure portability of PDS & health benefits.

5.) provide level playing field for female workers.

Overall e-shram portal heralds a new era in worker welfare which is mandated by Article 39 of Constitution.

Q9.)

Recently at G-20 ministers meet the global leaders agreed to ensure global minimum corporate tax rate of 15%. Any company having operations & not having physical presence can also be taxed.

<u>significance</u>:

1.) help in curbing base erosion & profit shifting.

2.) ~~reduce~~ help in enhancing tax-to-GDP ratio.

3.) ensure greater accountabilty on Digital firms & MNCs to pay their fair share of taxes.

4.) put pressure on tax-haven countries like Cayman Islands to rationalize

their taxes.

Prospects for India :

1.) India has large internet consumer base of 600 million. India stands to gain around $1 billion or more by this global tax.

2.) help in enlarging income from "equalisation levy" imposed by India.

Challenges for India :

1.) lack of clarity on detailed rules.

2.) Many Indian digital companies may face taxation abroad.

3.) US may take diplomatic steps if tech giants like Google & Facebook are affected.

Going forward India needs to work with global community to frame harmonious rules for smooth implementation.

Q10

Recently AUKUS pact was announced as new security pact between Australia, US, UK. under it Australia scrapped French ~~sub~~ submarine deal & US&UK promised to provide nuclear submarine technology to Australia.

AUKUS: new era of global geo-politics:

1.) formation of a new "Anglophonic security alliance".

2.) help in countering China's rising maritime assertiveness.

3.) France's role and ambition as major Indo-Pacific power dented.

4.) a new resurgent Australia with signi-

-ficant naval power in Pacific.

Impact on India's interest :

1.) AUKUS may reduce USA's commitment to Quad which India considers important

2.) France may enhance defence technology sharing with India.

3.) strong marine presence of other countries reduce pressure on Indian Navy

4.) Strong Australia may affect India's major role as "Net Security provider" in Indo-Pacific.

Going forward, India needs to enhance engagements with all AUKUS partners & France to carve out strong opportunities from AUKUS pact related development.

Q11.)

73rd constitutional amendment provides for Panchayati Raj as an institution of self-government to realize Gandhian role of "Gram Swaraj".

Effective devolution of financial power to Panchayat is important:

Reasons:

1.) Effective devolution allows Panchayat to enact people centric policy.

2.) It enhance public trust on Panchayat institution.

3.) Panchayats can invest better in local infrastructure creation. eg: local water

infrastructure.

4.) Panchayats can coordinate at all 3 levels with strong thrust on bottom up approach.

5.) It will ensure professional capacity enhancement of sarpanchs including women sarpanchs.

6.) Financial devolution will reduce bur-
-eaucratic interference in Panchayats.

<u>Reasons behind lack of financial resou-
-rces</u>:

1.) inadequate internal resource gener-
-ation by Panchayat due to:

1.1) poor training of sarpanchs.

1.2) low tax base due to low income activities in rural areas.

2.) insufficient devolution of power to levy tax, tolls etc by State Legislature.

3.) Many states have not constituted Finance Commission for decades.

4.) Most of the funds available to panchayats is in form of tied funds. This reduces discretionary powers of panchayats.

5.) inadequate institutional capacity at all 3 panchayats levels to effectively utilize existing powers.

Going forward <u>IInd ARC</u> calls for effective devolution of funds, functions & functionaries (FFF) to panchayats. Similarly panchayats should coordinate with rural CSCs to enhance revenue generation. Mani shankar Aiyar Committee calls for "activity mapping mechanism".

Q12.)

Judicial activism refers to active role played by judiciary to lay down socio-economic policies ~~to~~ & directions for legislature & states. Powers for judicial activism is derived from Article 13, 142, 226 etc.

Judicial activism: Necessary tool to curb legislative adventurism

1.) Legislatures commanding high majority may try to enact laws which violate "basic structure of constitution".

eg: 42nd Amendment provided that:

1.1) any law which gives effect to any directive principle shall not be violative of Article 14, 19

1.2) imposition of emergency outside

purview of judiciary.

1.3) election of Prime Minister outside purview of judiciary.

These provisions grossly affected the fundamental rights & they were struck down by courts in Minerva Mill case 1980.

to curb executive excess

Executive, at times, may issue notifications or rules which may jeopardize fundamental rights or affect constitutional values.

eg: 1.) section 66A of IT Act was zealously applied by police to curb free speech on internet on "arbitary grounds". It was struck down by supreme court in shreya singhal case.

2.) In Vishakha guidelines, Supreme Court itself issues guidelines for women safety due to executive apathy.

However judicial activism is also criticized on following grounds:-

1.) It affects ~~power of~~ "separation of power" which is essential principle of constitution.

eg: Supreme Court's verdict to ban alcohol within 500m of highways was unnecessary encroachment into policy domain of executive

In such cases, supreme Court should ensure that principles of "judicial restraints" should always be kept in mind. Judicial activism should be an exception to protect citizen's rights & not a norm.

Q13.)

Last year government provided for electoral bond scheme by amending Finance Act. It was declared as a measure to "cleanse political funding". However there are issues with the scheme.

Growing trend away from transparency.

1.) Scheme removes the 7.5% cap on corporate funding & opens floodgates for corporate funds to enter politics.

2.) Scheme allows foreign companies ~~of~~ to fund political parties. Thus scheme may enhance foreign influence on In-dian politics.

3.) Scheme ensures that donations received

by electoral bonds scheme need not be reported to IT Department or Election Commission.

4.) Scheme ensures that identity of donor remains anonymous.

5.) Only SBI can issue the electoral bonds so government can have data of donors who donated to opposition parties.

However scheme has certain cons-centages as well:

1.) It ensures that political parties cannot receive cash donation above ₹ 20,000.

2.) every donor will have to ensure e-KYC. This will reduce influx of black money in politics.

3.) Anonymity of donor will help in

preventing victimization of donor.

Going forward, there is a need to transform the scheme to ensure that Election Commission of India's concerns are addressed. As per ADR Data, 55% political parties receive most donations from "unknown sources".

There can be following reforms in scheme to enhance transparency:

1.) reporting donation above certain amount to Election Commission.

2.) ~~reducing~~ capping amount that foreign companies & corporates can donate under scheme.

3.) Ensuring intra-party democracy to enhance effectiveness of fund utilisation

Q14.)

Principle of subsidiarity is an essential principle which states that a task if it can be performed well at lower levels of administration, should be devolved to lower levels. Principle of subsidiarity lays foundation of decentralised governance.

<u>well reflected in COVID management:</u>

1.) states were given freedom to decide on containment zones at local levels.

2.) enhanced fund devolution to states to set up oxygen plants as they think fit.

3.) In second wave, states were given freedom at district level to opt for

Curfew or lockdown.

4.) In initial phases, states had freedom to procure vaccines during COVID.

5.) DM/SDM at ground level had powers to set up "micro-containment" zones & allow economic activities to continue.

<u>However at same time, in certain instances, this spirit of subsidiarity was violated as well:—</u>

1.) delays in releasing GST compensation by centre.

2.) centralised vaccine procurement & distribution to states.

3.) imposition of Disaster Management Act and regular issue of guidelines under aegis of NDMA & Home Ministry.

4.) centralised allocation of "oxygen express" trains by centre.

5.) During first phase of COVID, centre imposed a uniform nationwide lockdown which had huge disruptive effect.

There is a need to ensure healthy implementation of principle of subsidiarity to ensure good & effective governance in following ways:-

1.) greater power devolution by centre to states.

2.) greater power devolution by states to Panchayats and ULBs.

Q15-)

Social media has led to creation of an interconnected world. This has also enhanced connectivity between people & government machinery.

<u>Social media: greater transparency & accountability:</u>

1.) enhanced access of citizen to government officials & ministers via tweets, comments

2.) people are much more aware of key government initiatives, their impacts & success.

3.) Key public service platforms like Twitter seva of External affairs ministry enhanced public access to ministry.

4.) Social media can quickly bring out callous & insensitive nature of many public servants.

5.) Social media movements like #MeToo helped in exposing several ministers accussed of women harassment

Need of institutional accountabilty over social media accountabilty:

1.) institutional accountabilty is much more formal, process-driven & rules based.

2.) institutional accountabilty has potential to formally prosecute corrupt

and inefficient officials.

3.) while social media accountability may be more public-image driven, institutional accountability is driven by performance & efficiency.

4.) social media accountabilty may be based on emotional outpour, institution accountabilty is more deliberated & carefully implemented.

Going forward, there is need to enhance institutional account-abilty by following ways:-

1.) better scrutiny by parliamentary committees.

2.) "strategy @75" by NITI ayog calls for SPARROW (Smart Performance appraisal window) for 360° assessment of civil servants.

Q16.)

Public Service Delivery is one of the core functions of state to ensure a just and dignified life for all for holistic national development.

State has right incentives:

1.) Better public service delivery will help in improving human capital.

2.) Better service delivery ensure high economic growth.

3.) Better service delivery enhances tax-to-GDP ratio

Indian context:-

1.) India aims to increase formaly trained workforce, reduce child stunting.

2.) India's goal to enhance tax-to-GDP ratio to more than 20% can be

attained.

State has right intentions : Indian context

1.) India is a "welfare state" (as per Part IV of constitution).

2.) Indian Preambles aims to secure to all its citizens social, economic & political justice.

State's capacity is questionable:

1.) Inadequately trained workforce.

2.) ~~xxx~~ inadequate availability of research & data-driven inputs for policy making.

3) poor monitoring & audit of scheme.

However it can sometimes be seen that even intentions and incentives are distorted.

Eg: 1.) Criminalisation of politics leads to malafide intentions among policy

makers.

2.) Due to high discretionary power, high centralisation of power, bureau-cracts have incentive in maintaining status quo.

Steps needed:

1.) to improve intention:
IInd ARC calls for "Code of Ethics" for ministers & civil-servants.

2.) to improve incentive
~~Mid~~ IInd ARC calls for mid career review of performance of civil servants. If performance is unsati-sfactory then removal.

3.) to improve capacity:
Enhance training workshop programmes for government officials. eg: Mission Karmayogi.

Q17.)

In recently released Global Hunger Index, 2021, India's rank fell to 101. At same time NFHS-5 data reveals that:

- 19% children are stunted.
- 38% children are under-weight.

Problem of hunger

Not in food production

- Recent ISRO data revealed more than 200 million tonnes of cereal production.
- As per FCI data, its procurement and buffer stock have reached high level due to heavy production.

Various other underlying issue:

1.) poverty: 25.01% multidimensionally poor (as per National MPI report, 2021)

2.) poor women nutrition levels (53% women anaemic).

3.) poor feeding techniques among children & adolescent girls.

4.) caste based deprivations & inequitable food access.

5.) poor water & sanitation hygiene.

6.) exclusion error in government schemes. in recent Jharkhand survey many PVTGs missed rations due to non-linkage with Adhaar.

7.) due to gender discrimination: women & adolescent girls eat at last & least quantity.

8.) low awareness on importance of breastfeeding.

Going forward following steps are needed:

1.) following "POSHAN plus" strategy:-

1.1) convergence of scheme.

1.2) technological monitoring of schemes.

1.3) making feeding habits a community movement

1.4) enhance girl education, skilling opportunities.

These steps can help India in achieving SDG Goal 2 of "zero hunger".

Q18.)

Health is state subject as per VIIth schedule. The most important component of healthcare is primary-healthcare which involves Primary Health centres at Village level.

democratisation of healthcare:

Democratisation of primary healthcare involves

1.) enhancing no. of doctors at Primary Health Centres.

2.) increasing the package of diagnostic services available for free at PHCs.

3.) improving the infrastructure at PHCs in terms of sitting capacity, access to clean water, sanitation facilities.

4.) enhancing access of PHCs to poor people, particularly women with help of ANMs, ASHA workers.

5.) increasing no. of PHCs & Health & wellness Centres envisaged under Ayushman Bharat.

Indispensible for equitable healthcare:

1.) it enhances healthcare access in rural area which faces shortage of doctors.

2.) better infrastructure increase patient footfalls, specially women, disabled, elderly.

3.) free diagnostic service enhances access to poor and low-income households.

4.) involvement of ASHA, ANMs enhance access of healthcare to women, elderly

Indespensible for comprehensive healthcare

1) at PHCs, people can learn about:

1.1) healthy eating habits.

1.2) need to quit tobacco, drugs

1.3) significance of WASH.

2.) under Ayushman Bharat, 10% PHCs/HWCs will be handled by AYUSH Ministry. Ayurveda, Yoga etc. can enhance comprehensive well-being.

3) PHCs/HWCs can enhance awareness of free secondary & tertiary care under PM Jan Arogya yojna. This further helps in fulfilling objective of comprehensive care.

National Health Policy, 2017 calls for enhancing health expenditure to 2.5% of GDP with two-third expenditure for primary healthcare. It needs to be followed.

Q19.)

Indo Pacific refers to vast geo-strategic expanse connecting Indian Ocean & Pacific ocean & its littoral states.

factors driving global shift to region:

1.) rising economies in the region like India, China, Indonesia, Vietnam.

2.) important sea lanes of communication & Trade pass through region. eg: Suez - Colombo route.

3.) rising Chinese assertiveness & expansionist claims. eg: spratley island at South China sea.

4.) large markets available in Indo-Pacific region.

5.) US- China rivarly for supremacy.

6.) to give thrust to blue economy -

6.1) mining oil in South China sea

6.2) mining polymettalic nodules in central Indian Ocean.

India's interest in region:

1.) It is important for India's role as "Net Security Provider" in Indian Ocean.

2.) India's 80% energy is imported via sea.

3.) to ensure freedom of navigation, overflight & commerce in South China sea.

4.) India's 90% trade passes through region.

5.) To give thrust to India's policy of SAGAR,

6.) to contain Chinese submarine & secret missions from threatening Indian interests in region.

Challenges faced:

1.) limited trade with regions key partners like AUSTRALIA, Indonesia etc.

2.) Russia, a major Indian partner is against Indo-Pacific idea.

3.) Countries of the regionally are heavily dependent on China economically.
eg: Australia.

4.) Confusing US policies in the region.
eg: recent AUKUS treaty by sidelining France.

5.) limited domestic expenditure on navy due to land based challenges.

India needs to strengthen its commitment to trade, naval exercises (eg. Malabar), IORA, IONS, Quad, Act East Policy to successfully manage Indo Pacific.

20)

Recent takeover by Taliban over Kabul has posed a new set of strategic, regional challenges for India. It has once again brought forth India's key challenge — "Panipat Syndrome"

Current regional & environment:

1.) Taliban dominated Haqqani network is controlling key power levers.

2.) High influence & strategic depth of Pakistan in Afghanistan.

3.) Issues: — 3.1) threat to minority & women rights.

3.2) threat to India's development projects - eg: Salma dam.

3.3) Threat ~~to~~ of revival & regrouping of terrorist in region

4.) China is supportive of Pakistan.

Global environment:

1.) US has frozen $9 billion Afghan assets
2.) Russia, Central Asian Countries, Iran are keen on engaging Taliban.

Strategic goals of India:

1.) peace & stability in Afghanistan.
2.) no terrorist grouping.
3.) inclusive government formation.
4.) respect of women & minority rights.

India's Policy prescription:

1.) informal engagement with Taliban.
2.) humanitarian aid for Afghan people.
3.) coordination with Central Asian Countries to tackle terrorism, extremism
eg: recent Delhi summit by NSA of India.
4.) engagement with global community like USA, Russia, UN to ensure:-

4.1) respect for women & minority rights.

4.2) to pressurize Pakistan on terror.

4.3) to ensure recognition of Taliban only after extracting several guarantees for global peace.

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INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
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18	15	
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20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI**
   इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
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EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

Q1.)

Article 112 directs the Government to lay down its "annual financial statement" in parliament which is known as budget. Budget is financed in several ways. Apart from that off budget borrowings are also present.

Off budget borrowing

1.) These are the funds borrowed by government agencies, PSU's, CPSEs for meeting their expenditure.

2.) off-budget borrowings are not included while calculating fiscal deficit. However their payment is done from budget.

Role in raising funds:-

1.) These borrowings allow government to meet fiscal deficit targets under FRBM Act.

2.) Help in maintaining investor confidence in "gilt-edged bonds".

3.) provide additional borrowing space for welfare schemes & infrastructure.

Desirability:

1.) They are usually less desirable because:-

1.1) they hide actual debt levels of government.

1.2) They may affect fiscal prudence.

1.3) lead to sub-optimal performance of PSU's/CPSEs

1.4) may lead to poor efficiency in welfare expenditure

Going forward government should completly disclose its levels of off budget borrowings. At same time, they too should be involved in calculating fiscal deficit. Budget 2020-21, 2021-22 is important landmark in case.

Q2.)

Rising population has put India on track to be most populous country by 2030. At same time India ranks 101 on Global Hunger Index, 2021. In this context, food security in India has become important challenge.

GM Crops → genetically modified crops.
eg: GM-Brinjal, GM-Mustard.

Need/Benefits of GM Crop to attain food security:

1.) They can ensure higher yeild & productivity with limited input.

2.) can help in achieving pest-resistance.

3.) can ensure drought ~~tole~~ tolerant, salinity tolerance in crops.

4.) can help in ensuring Bio--

- fortification and enhancing nutrition security as well.

Concerns regarding GM crops:-

1.) Concerns regarding toxins & human health impact. eg: allergies.

2.) Concerns regarding "gene pollution" of native crops.

3.) ethical & religious objections from certain groups.

4.) It can damage local biodiversity, become invasive species.

5.) It can be costly and input intensive as major private comp-
-anies like Monsanto will monopolize.

Going forward, there is a need to develope a holistic GM strategy, enhance transparency by sharing field trial results with public. By taking public into confidence, government should also introduce liability clause for any mishap.

Q3.)

India provides for Minimum support Price as a policy intervention to support agriculture. Government assures farmers that it will buy crops at MSP if prices in market fall below it.

<u>Creates a broken system</u>

MSP has following negative impacts:

1.) it promotes only water intensive crops like Rice, wheat.

2.) excessive government price intervention discourages private sector to:

2.1) build godown & cold storage

2.2) directly purchase with farmer

3.) MSP-based effective procurement is in only few states like Punjab, Haryana.

4) <u>Complicates international trade rules</u>:

1.) High MSP leads to high subsidies due to which India's subsidy has breached "de-minimis" level of 10% of 1986-88 production levels. It leads to violation of "agreement on Agriculture" at WTO.

2.) India has to face international scrutiny & pressure.

<u>However still MSP is desirable because:-</u>

1.) it ensures price stability, remun-erative returns for farmers.

2.) it ensures food security of poor via PDS system.

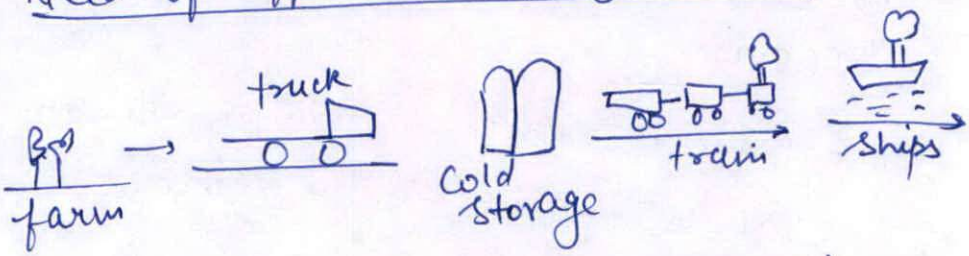
3.) It encourages farmers to invest in mechanisation.

Going forward, NITI Aayog calls for rationalizing MSP related procurement, delegating powers to State. At same time MSP based procurement can be replaced with Price Deficiency Payment scheme like MP.

Q4.)

COVID crisis had exposed demand for food crops, cereals in several countries. India can emerge as a major food exporter to meet global demand & enhance exports.

Need of efficient supply chain



Supply chain strengthening will require:

1.) strong network of rural road.
2.) increased access to affordable cold-storage trucks
3.) enhanced infrastructure of godown & warehouses.
4.) nationwide transportation via trains.

5.) robust port infrastructure to enhance food exports.

Right marketing strategies like following is needed:

1.) showcase India's special GI crops. eg: Kinnaur's apple.

2.) showcase organic products of India. ~~eg.~~

3.) enhance visibility at international high value markets by exhibitions, expo (eg: Dubai expo, 2021),

4.) build & promote "Brand India" by better quality control.

Initiatives like PM Gramin Sadak yojna, Krishi Rail, Krishi Udaan, India's agriculture exports shows abroad can help making India centreheart of global food supply.

95.)

In India, Governments across states are working on creating land banks. These are a group of land, pre-procured by state government with prior approvals & clearences to kickstart economic activities.

benefits:

1.) reduce delays in land-acquisition.

2.) encourage land use efficiency by ensuring better planning & infrastructure development.

3.) enable economic growth by providing faster land access to ensure fast manufacturing job creation, export promotion.

Concerns associated:

1.) can lead to zealous land acqui-
-sition which can cause farmer
resentment.

2.) enhancing supply of land endlessly
is not possible.

3.) a large no. of land banks remain
under-utilised due to poor planning.

4.) ~~ensure~~ lack of availability of
information on existing land
banks.

Going forward there is need to do
GIS mapping of existing land
banks, display of land banks on
public platforms. At same time,
evidence & data driven policy should
be designed to fully realise
potential of land banks.

Q6.)

Recently released Land Atlas by ISRO showed that 29% of India's land is subjected to land degradation & desertification.

Desertification refers to loss of biological & ecological productivity of land and its conversion into deserts.

<u>One of the greatest environmental challenge: Desertification</u>

1.) leads to decline of biodiversity of region.
2.) affects ecological services from region.
3.) leads to death of native vegetation, trees.
4.) reduces soil fertility, soil carbon stock.

5.) leads to soil erosion.

Climate change making it worse

1.) It is causing intensified heatwaves & droughts (1.3% increase in drought prone area in India per decade, Sixth IPCC report).

2.) It is affecting the flow of rivers, leading to evaporation of natural wetlands.

3.) Temperature rise is leading to rapid loss in soil moisture.

Going forward there is need to enhance ecosystem restoration approaches. eg: Banni Grassland (Kutch).

Further global initiatives like LDN Fund, REDD+, Bonn challenge can help in reversing desertification.

Q7)

Intellectual property refers to the various designs, creations, inventions that are granted legal protection to ensure its commercial use by owners.

Open source licence projects are those released in public for free & open use.

Advantages:

1.) allow access to new technology and algorithms to new startups.

2.) catalyse growth in MSMEs.

3.) ensure equitable distribution of Intellectual property in world.

4.) It can lead to further inno-vation and development of new applications of existing technology.

Disadvantages :

1.) It may discourage innovators & firms from :-

1.1) hiring more researchers.

1.2) investing further in new research which is costly.

2.) It may lead to brain drain.

3.) open source licence can be misused by anti-social elements for nefarious ends.

Governments need to build a holistic policy to ensure :

1.) holistic remuneration to original IP holder via hybrid models to incentive them.

2.) ensure capacity building among startups, MSMEs to utilize open source licence.

Recent ONDC project by ~~social~~ IT Ministry can help in building better e-commerce models by MSMEs.

Q8.)

Indian space sector has witnessed tremendous growth in last 2 decades via its marquee achievements like Mangalyaan, GSLV, Chandrayaan-2.

<u>Dominated by government & government institutions -</u>

1.) Department of space ensures policy control on space sector.

2.) ISRO → primarily organisation leading India's space endeavours.

3.) <u>Antrix</u> → commercial arm of ISRO to bag foreign contracts.

4.) <u>NSIL</u> → government controlled entity to market spin-off technology of ISRO to Indian private sector.

5.) <u>Inspace</u> → to govern launching, handhold private sector.

Indian space association (ISA)

It is recently set up entity which involve key Indian private players who aim to utilise space based commercial & business opportunities.

Significance of ISA

1.) will help Indian private sector to coordinate in:-

1.1) exploring new business models.

1.2) undertaking joint space mission.

1.3) catalysing investment from investors.

2.) various frontiers like:

2.1) space tourism

2.2) space based internet connectivity.

2.3) space based telecom services

can be explored like SpaceX in USA

ISA with tagline of "Bhoomandal se Brahmand tak" (From Earth to universe) can be game changer to herald entry of India private sector in space.

Q9.)

since historical times, the journey of human ~~process~~ progress has been journey of technological & machine development.

Man & Machine

Role in national security

1.) Human being, primarily armed forces are the first line of defence & last line of defence. Police, Army, Navy, Airforce, Paramilitary forces like CRPF are group of valient men.

2.) Technology boost capacity to have better border surveillance.

Role in making urban area secure

1.) Police are important and first responders to ensure security in urban areas.

2.) Technology like CCTV camera,

Facial recognition systems help in making urban space secure for women, children.

Technology: stakeholder in internal security

1.) Better weapons like block pistols, AK-203: necessary to outcombat criminals.

2.) National Automatic Facial Recognition: to build database, identify terrorist, criminals, drug peddlers.

3.) Drone surveillance: to monitor remote areas for insurgents, maoist, crowd management.

4.) Better communication technology: 5G, GPS: ensure coordination among personnel.

A holistic modernisation programme is needed with dedicated funding to improve technology.

Q10.)

National Security Guards are the elite commando force which comprises of personnel from army, police, paramilitary force. They fall under control of Home ministry.

Formidable force to tackle terrorism

1.) The force is primarily trained to tackle

- urban terrorist attack
- Bomb attacks
- neutralize terrorists holding people hostages.

Mandate:

1.) to curb terrorism in all it forms.
2.) to engage in counter terrorist operations primarily in urban

areas

3.) conduct hostage rescue operation.

4.) A dedicated bomb research & disposal squad to neutralise all severe forms of bomb attacks, trace the perpetrators.

Key achievements:

1.) Commendable counter terror operation during 26/11 attack.

2.) provide round-the-clock quality security to Z+ category security holder dignitaries.

3.) Has helped in neutralising several bomb ~~ss~~ scares in many areas.

4.) Training CRPF personnel for better action in Kashmir.

There is a need to upgrade, expand, modernize NSG by cross-country training exercise & courses to make them true sentinels of Indians.

Q11.)

Recently India launched National Asset monetisation pipeline 2021.

Asset monetisation

Asset monetisation refers to leasing, selling the assets owned by government to generate revenue which can be used by government for public welfare.

Assets owned by government:

1.) Land with PSUs.
2.) Transmission lines.
3.) Gas pipelines.
4.) railway routes.
5.) operational highways.

Need of Asset monetisation in India:

1.) to engage private sector's expertise in ensuring:
   1.1) efficient utilization & optimum value realisation from assets.

2.) provide additional funds to government to finance National Infrastructure pipeline.

3.) reduce budgetary pressure, fiscal deficit.

4.) to utilize unutilised asset lying with PSUs to enhance their capacity. eg: vacant land blocks.

5.) vacant land, assets can spur economic growth by providing base for other industries.

National monetisation pipeline includes various greenfield & brownfield assets to be monetised by leasing them.

Issues that need to be addressed:

1.) ensuring proper valuation of assets.
2.) ensuring that private sector maintains quality while asset operations.
3.) attracting private sector investment by making deals lucrative.
4.) having a transparent framework to reduce chances of corruption.
5.) ensuring swift & harmonious dispute resolution.

To make National Monetisation a success there is need to adopt FIDIC Model of Contract & NITI Ayog's NIP Report) & also learn from Kelkar committee on PPP's recommendation. This will ensure its success.

Q12.)

Recent rise of innovative models for raising funds for social welfare has led to emergence of social stock exch-
-ange.

What is social stock exchange?

It is a platform where companies (for for profit enterprises & not for profit organisation) with social welfare agenda (like health, education, skilling) can raise funds.

It provides investors an alternative platform to invest in accredited & approved enterprises in line with their social welfare objectives.

Need for setting up SSEs:

1.) provide companies with social motives an alternative source to raise funds.

2.) reduces pressure on banks to finance welfare projects.

3.) allows investors to see the performance of company in a transparent manner and invest for developmental cause in a smart, easy, electronic way.

4.) reduces pressure on government to finance development agenda.

5.) helps in reducing SDG Financing Gap of $400 billion.

6.) leads to a vibrant price discovery market for socially conscious investment & trading.

Key challenges in implementation:

1.) It is difficult to identify progress indicators for social cause.

2.) difficult to accredit company's credentials & its work culture.

3.) Low awareness among investors about existence of such platforms.

4.) lack of clear regulatory rules & policy decision of government.

5.) uncertainity of returns for investors due to uncertain financial viabilty.

Going forward, recent SEBI guidelines for SSEs provides an impressive starting platform to move forward on the matter. We need to learn further from social stock exch-anges of Singapore & London to evolve a simplified regulatory regime. Given vast developmental needs, SSEs can accelerate progress towards SDGs.

Q13.)

Agriculture extension consists of several services which support the sowing, growing and harvest management of crops in easy, scientific and efficient ways.
eg: scientific weather advisories, pest management etc.

Importance in India:

1.) necessary to enhance remuner-ative return for small & marginal farmers who form 86% of farmers.

2.) reduce post harvest ~~wand~~ losses

3.) reduce chances of crop failure.

4.) enhance productivity & yield.

5.) improve quality & boost agri-

- exports to high value markets.

Challenges faced in provisioning :

1.) low awareness among farmers regarding availability of service.

2.) inadequate no. of Kisan Vigyan Kendras (KVKs) to ensure effective access to services.

3.) inadequate trained professionals to cater to need of large no. of farmers.

4.) inadequate access to technological tools & platforms to provide meaningful services to farmers.

5.) low funding allotment by government.

National Mission on Agriculture Extension & Technology.

It is the flagship mission to

enhance farmers access to effective extension services in following ways:

1.1) regular weather based agro-advi-sories for farmers regarding sowing & harvesting time, irrigation & fertiliser application frequency.

1.2) better technology to ensure scien-tific row planting, better storage techniques post harvest to enhance shelf life.

There is a need to enhance government's funding for NMAET along with conducting regular farmer outreach by block level camps to enhance farmer access to extension services.

Q14.)

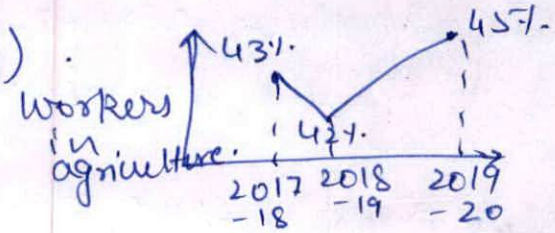
Employment refers to involvement of people in meaningful economic activities to generate livelihood & produce goods & services for country.

"Employment problem" that India faces:

1.) High unemployment rate = 4.8% (PLFS-2019-20)

2.) Low female labour force participation = 22% (PLFS 2019-20)

3.) rising no. of agriculture workers engaged in "disguised unemployment).



4.) High level of unemployment between 18-29 year olds.

5.) jobless growth.

6.) high level of informal workers (90% of workforce) with low access to:-

6.1) social security benefits.

6.2) hazardous work conditions & low access to protective gear.

Fundamental reason behind problem:

1.) High school drop out rates (77% - enrollment rate of girls in secondary).

2.) 17% of children are stunted (NFHS-4)

3.) ~~40%~~ 53% graduates are unemployable (India skill report, 2021).

4.) heavy closure of MSMEs due to COVID induced disruption - "demand & supply shock".

5.) ~~wage~~ growth powered by services sector & policy neglect of labour intensive industries.

6.) Patriarchal norms & household work burden & maternity related break hampers women labour force participation.

7.) Lack of meaningful jobs in rural areas leads to high disguised unemployment in rural sector.

8.) poor implementation of gover-nment labour laws.

Going forward following schemes of government need to be implemented to revive growth & jobs:-

1.) 4 Labour codes on wages, social security, Occupational safety.

2.) production linked incentive to catalyse growth & jobs in labour intensive sector.

Q15.)

India has 7500 km of Coastline. Around 90% of India's trade by volume passes through sea which highlights importance of maritime trade logistics.

Steps taken for integrating maritime logistics:

1.) Sagarmala pariyojna launched to ~~enhance~~ :-

1.1) upgrade port infrastructure.

1.2) enhance port connectivity with hinterland via road, rail - eg: Indore - Manmad rail links.

1.3) enhancing economic activity in coastal area.

2.) Major Port Authority Act, 2021 to improve governance of major ports.

3.) Coastal Economic zones have been set up.

4.) SAROD Ports → for dispute resolution.

5.) Dedicated freight corridors to improve rail links with hinter-land.

Much more needs to be done because following problems still exist:

1.) poor port connectivity

2.) Outdated port machinery & infrastructure.

3.) inadequate depth of draft at ports.

4.) Port governance model is largely regulated with complex rules.

5.) Heavy dependence on road than rail (40% freight moves via highways alone).

6.) lack of trans-shipment hubs in India.

Going forward there is a need to:

1.) establish more major ports eg: Vadhavan port.

2.) fastrack operations on Dedicated freight corridors.

3.) widen roads & highways around ports via Bharatmala pariyojna.

4.) greater private sector participation in port operation by adopting "landlord model".

5.) setting up trans-shipment ports like Ennore in India.

Integrating Maritime Trade logistics has potential to boost exports, create jobs, power up Blue economy & can re-establish India as a hub of global manufacturing supply chains.

Q16.)

Recent Sixth IPCC Report has raised alarm over climate change "code red". In this context natural capital & ecosystem accounting has gained importance among policy makers.

Crucial to understand link between economy & environment:

1.) Accounting is necessary to understand true economic valuation of ecosystem services

2.) It helps in measuring true decline in natural capital due to consumption fuelled growth.

3.) It provides researchers better tools to link economy & environment.

4.) Data collection & ~~manufacturing~~ processing

becomes easier.

5.) results in better policies to safe-guard environment, specially natural parks & wildlife sanctuaries.

6.) It results in evidence informed decision making.

7) It creates awareness in public regarding importance of natural capital.

India specific initiatives:

1.) Recently Natural Capital Accounting Valuation of Ecosystem services (NCAVES) India Summit was organised by Ministry of Statistics & Programme implementation.

2.) India has adopted UN's SEEA framework for natural capital

accounting.

3.) Various survey like Tiger Census, Elephant Census, Leopard Census, Birdlife survey, Management Effective Evaluation (MEE) standards for Tiger reserves are used to guage their quality & natural capital.

4.) India state of forest report, 2019 is also effective report of natural capital accounting.

Going forward, there is need to mainstream it in policy at national, state & municipal level.

Q17.)

According to Census 2011, more than 30% of India's population lives in cities. This figure is projected to rise to 50% by 2040.

Enhanced risk & impact of natural disaster

1.) Rapid urbanisation :

1.1) It usually leads to encroach-ment of river flood plains.

1.2) It can lead to unsafe const-ruction proliferation enhancing risk of earthquake.

1.3) Risk of flash flood : due to encroachment of urban wetlands, destruction of urban greenery.

1.4) Risk of heat waves : due to urban heat island effect.

2.) Rapid population growth

2.1) enhanced risk to drought due to food & water stress.

2.2) enhanced risk to earthquake due to concentration of population.

2.3) enhanced damage due to cyclones due to low awareness.

2.4) enhancing vulnerability to climate induced - displacement as climate refugees.

Adequate measures needed to address concerns :-

1.) comprehensive hazard, risk, vulner-ability assessment.

2.) usage of technological tools like GIS mapping, drone surveys

3.) Planned urbanisation via:

3.1) flood plain zoning.

3.2) following building codes.

3.3) using data based planning.

4.) preparing localized mitigation & preparedness plans.

5.) non-structural measures like conducting mock drills, public awareness via school curriculum.

6.) ensure that urbanisation is addressed by ensuring concept like AUR BAN, PURA (Providing urban facilities in rural areas) are implemented.

We need to follow Sendai Spirit of "Build Back Better." 15th Finance Commission has provided for incentives for demographic performance, ₹8000 crore for 8 new disaster resilient cities ~~sho~~. Such policies should be encouraged.

Q18.)

Recently the Budget 2020-21 provided for National hydrogen Mission as an ambitious plan to meet India's rising energy demand. India currently has installed capacity of 300 GW, imports 80% oil needs & derives 55% power from coal based plants.

Reasons for rising energy demand:

1.) thrust to manufacturing services.

2.) rising population of 130 crore

3.) increasing demand of energy in rural areas, Tier II & III cities to rising income levels.

Nation hydrogen energy mission as game changer:-

1.) Hydrogen can be generated in green ways. eg: Green hydrogen via electrolysis of water.

2.) Hydrogen can supply energy in following ways:-

2.1) as fuel in combustion engines. eg: HCNG.

2.2) generate electricity via fuel cells.

2.3) add as reservoir or storage of excess solar & wind energy

2.4) help in grid stabilisation.

3.) hydrogen is a clean fuel with only release of water on burning.

4.) Hydrogen can help to decarbonize

several sectors like fertiliser, iron & steel, cement.

Challenges in mission:

1.) lack of code of standard on technology.

2.) initial investment to manufacture hydrogen is heavy.

3.) dangers in storage and transportation.

4.) current hydrogen manufacturing produces emission.

Following steps are needed to realize true benefits of hydrogen economy supply chain:

1.) build standard code of technology standards.

2.) public private participation

Mission & India H_2 Alliance can play transformational role to develope H_2 based economy.

Q19.)

Cybersecurity Ecosystem refers to all the processes, ~~engu~~ equipments, insti-tutions involved in ensuring safety and security of cyber space, network devices.

Geostratgic instability of region:

India faces multifarious challenges:—

1.) export of terrorrist modules & online radicalisation from Pakistan.

2.) sophisticated cyber attacks from china. eg: Mumbai power outage in 2020.

3.) rising tensions & cyberattack on nuclear plants of Iran.

4.) Taliban takeover of Afghanistan.

Keen awareness of cyber threat:

India is aware of following facts:

1.) India ranks 3rd on Internet Crime Report, 2020

2.) India ranks 10th on Global Cybersecurity Index.

3.) India has been victim of Ransomware, phishing attacks, honey trapping on online sites.

4.) India faced recent trojan attack on At Kudankulam nuclear plant

India made only modest progress:

1.) India still has high shortage of skilled personnel

2.) Low industry - academia linkage on cybersecurity practices

3.) poor awareness of "cyber-hygiene" among people.

4.) inadequate institutional capacity due to fragmented decision making at:

4.1) National Cyber Security Coordinator.

4.2) CERT - IN

4.3) NCIIPC.

<u>However India has taken some decisive steps like:</u>

1.) ~~da~~ issuing National Cyber Security Policy, 2013.

2.) issuing latest IT Rules, 2021 to enhance accountability on social media.

3.) released National Security Directive for Telecom sector, 2020

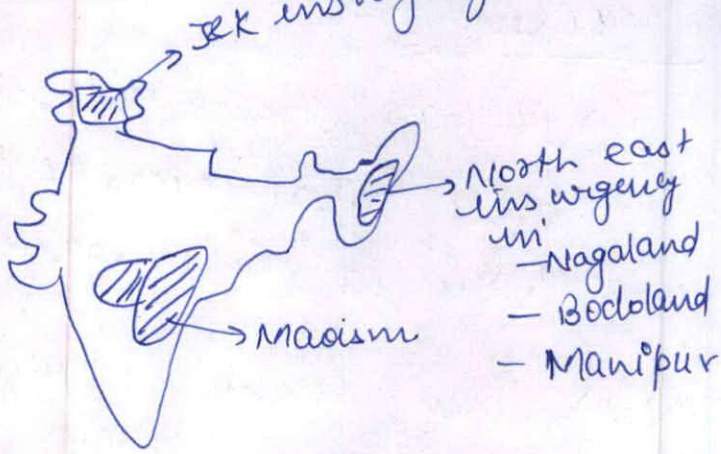
4.) created Cyberspace Command to undertake offensive operation under CDS.

India needs to work on Data Privacy Bill, 2019 & enhancing institutional capacity.

Q20.)

India is land of immense diversity and faces several internal security challenges that threaten national integrity and unity.

Key conflicts:



Developmental interventions alone cannot help in reasonable time frame because of following reasons:

1.) J&K insurgency

1.1) It is sponsored and financed by "deep state" & ISI in Pakistan.

1.2) There is lot of logistical support by overground workers.

1.3) online radicalisation of local youth.

1.4) cross border infiltration

1.5) efficient terror finance via hawala.

2.) Maoism

2.1) It has strong network in dense tribal areas of Danda-karnya (Chattisgarh), Telangana.

2.2) strong arms supply network.

2.3) efficient finance generation via ~~wo~~ minor forest produce.

3.) North East insurgency

3.1) There is strong support from Chinese intelligence (MSS).

3.2) strong supply of finance from Golden Triangle.

3.2) problem of ethnicity is also there

Hence along with development following steps are needed:

1.) J&K

1.1) busting network of overground support & financing network.

1.2) intelligence driven operation to counter foreign terrorist.

1.3) strong political outreach to youth.

2.) Maoism:

2.1) strong attack on various groups.
eg: recently successfull Gadchiroli encounter in Nov 2021.

2.2) busting finance and logistic support.

3.) North East insurgency

3.1) curbing flow of drugs.

3.2) political power devolution.

These steps can help in achieving success in reasonable time frame